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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,585	07/11/2007	Joao Merendeiro	285424US6X PCT	7066
22850	7590	11/09/2009	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1040 DUKE STREET ALEXANDRIA, VA 22314			DUFF, DOUGLAS J	
ART UNIT	PAPER NUMBER			
	3748			
NOTIFICATION DATE	DELIVERY MODE			
11/09/2009	ELECTRONIC			

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/568,585	<b>Applicant(s)</b> MERENDEIRO ET AL.
	<b>Examiner</b> DOUGLAS J. DUFF	<b>Art Unit</b> 3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on \_\_\_\_\_.  
 2a) This action is FINAL.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 14-29 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_ is/are allowed.  
 6) Claim(s) 14-29 is/are rejected.  
 7) Claim(s) \_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date: _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date: _____	6) <input type="checkbox"/> Other: _____

This Office Action is in response to Applicant's amendment filed 7/22/09.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 14-22 and 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Green (US 559703). Regarding claims 14-18, Green discloses a gear tooth (Figs. 1, 2) comprising a root including two concave root sectors (between b' and b''), with each of the concave root sectors being joined at an origin (at E) to a concave root sector of a neighboring tooth and a top including a first side and a second side, with each of the sides of the top joined to a respective one of the concave root sectors by a first transition point (b''), wherein each of the sides of the top includes two convex sectors (a, c) joined by a second transition point (between a and c) defining a discontinuity in curvature of the tooth profile, wherein the second transition point defines a bottom of a notch made in the tooth profile, wherein the convex sector following the first transition point has a spherical involute profile (c), wherein the convex sector following the second transition point has a spherical involute profile (a), wherein the top of the tooth includes a rounded end sector joined to each of the convex sectors following the second transition point by a transition sector (Fig. 1, 2).

3. Regarding claims 19-22, Green discloses an external gear pump comprising at least one pair of mutually meshed toothed, wherein each tooth of the gears is comprised of a root including two concave root sectors, with each of the concave root sectors being joined at an origin to a concave root sector of a neighboring tooth (b' to b'); and a top including a first side and a second side, with each of the sides of the top joined to a respective one of the concave root sectors by a first transition point, wherein each of the sides of the top includes two convex sectors (c, a) joined by a second transition point defining a discontinuity in curvature of the tooth profile, wherein two of the toothed gears are identical, wherein the first transition point on one side of one tooth rolls over a convex sector on one side of a tooth of an opposite meshed gear, wherein a shape of an end sector of the teeth matches a shape of a concave sector defined by juxtaposition of two roots of neighboring teeth (Figs. 1, 2).

4. Regarding claims 27-29, Green discloses a gear tooth according to claim 14, wherein the gear tooth is symmetric, wherein at least one tooth of the mutually meshed gears is symmetric, wherein each tooth of the mutually meshed gears is symmetric (Figs. 1, 2).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Green in view of Hennes et al. (US 6361289). Green discloses the pump of claim 19, but fails to disclose wherein an end sector of one tooth rolls between two teeth of an opposite meshed gear, while maintaining contact therewith until the one tooth slips away from the two teeth of the opposite meshed gear, wherein the teeth in mesh have at all times at least one primary bearing point and one secondary contact point, wherein a given active point of one tooth is successively a primary bearing point and a secondary contact point in the course of meshing, wherein the teeth of two meshed gears are in contact over more than one pitch.

7. Hennes teaches a gear pump wherein an end sector of one tooth rolls between two teeth of an opposite meshed gear, while maintaining contact therewith until the one tooth slips away from the two teeth of the opposite meshed gear, wherein the teeth in mesh have at all times at least one primary bearing point and one secondary contact point (col. 2, lines 37-41), wherein a given active point of one tooth is successively a primary bearing point and a secondary contact point in the course of meshing, wherein the teeth of two meshed gears are in contact over more than one pitch (Fig. 7). It would have been obvious for a person having ordinary skill in the art at the time the invention was made to utilize a primary and secondary bearing point in order to efficiently prevent any out-flow between the meshing teeth (col. 2, lines 40-41).

***Response to Arguments***

8. Applicant's arguments with respect to claims 14-29 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DOUGLAS J. DUFF whose telephone number is (571)272-3459. The examiner can normally be reached on M-Th 7 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas E. Denion/  
Supervisory Patent Examiner, Art Unit 3748

/Douglas J Duff/  
Examiner, Art Unit 3748  
11/3/09